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THE PITTSBURGH MEETING.

The Tenth Annual Meeting of the American Gas Light Association was held at the Monongahela House, Pittsburgh, Pa., on the 18th, 19th, and 20th of October. The attendance of members on each day was excellent. The meeting was called to order, on the morning of October 18th, by the President, General Andrew Hickenlooper, of Cincinnati, Ohio. The calling of the roll and other routine matters having been disposed of, the President delivered the inaugular address, which was largely devoted to a calm and unimpassioned consideration of many topics of more than ordinary interest and importance to the fraternity of this country.

The General paid particular attention to the care and nicety required in dealings with municipal authorities, and the necessity of demonstrating to the public that the interests of both gas producers and gas consumers are identical. One point in the address is well worthy of a thorough study; and that is where reference is made to the prevailing system of charging a lower price to the public authorities than is paid by the private consumer. This is, in principle and practice, all wrong; and General Hickenlooper hits the nail sqarely on the head when he says that such a method "is a grave mistake, based upon a short-sighted and improvident policy, the practical effect of which is to restrict consumption, render equitable reduction impossible, and to impose upon our patrons an excessive and unjust proportion of the expenses of public lighting instead of making it a tax upon the general public, where it properly belongs."

The example which he gives very clearly illustrates the working of this unequal system, in at least one case; and it would not be a very difficult matter to instance other places where the same, if not a worse, state of affairs exists. The idea of instituting and maintaining a National Board, for the purposes set forth in the inaugural, will be a matter for future consideration.

The General shares in the belief that the electric light will be but the means of furthering the advancement of gas lighting, and thinks it to be the true policy of gas companies to assist and encourage the employment of electricity as a means of educating the people up to a wish for a more brilliant illumination of streets and thoroughfares. The address will be found in our report of the proceedings, on another page, and well merits a careful and close perusal.

The following papers were presented: "The Future of the Gas Interest," by Mr. J. C. Pratt; "New Process for Making Water Gas," by Mr. T. B. Fogarty; "The Manufacture of Gas from Coal, and from Material other than Coal," by Mr. A. L. Allen; "Regenerator Furnaces," by Mr. Adam Weber; "Heating by Gas," by Mr. H. H. Edgerton; and on "A New Method of Teaching Chemistry," by Mr. William Farmer.

The paper on "The Future of the Gas Interest," evoked a very thorough discussion—interesting and exhaustive; and there can be no doubt but that much food for reflection was given to those who listened and did not take an active oral part in it. It is needless for us here to give a resume of the discussion, as both the paper and the discussion thereon will be found elsewhere in this number.

The paper of Mr. Fogarty, on a "New Method of Making Water Gas," was somewhat elaborate and lengthy; and was very thoroughly ventilated in the debate which ensued. This paper, as also the others presented will be given in due course.

The entire time of the first two days was devoted to the business proper of Association, and Friday, the 20th, was employed in enjoying the attentions and hospitalities extended by the Pittsburgh Gas Light Company, through its President, Mr. D. Hostetter.

At 8:30 A.M., on the morning of the 20th, the members of the Association, and its invited guests, left the Union Depot of the Pennsylvania Railroad (a special train having been provided), arriving at ten A.M. at Sewickley, where the far-famed mines of the Penn Coal Company are located. After an hour and a-half spent in examination of the workings underground, and admiring the completeness of every detail for the handling and transportation of the vast quantities of coal mined by the Penn company, the visitors returned to the surface, and were speedily engaged in a vigorous attack upon an elegant luncheon which had been set for them.

At one P.M. the party boarded the train in waiting, and a run o forty minutes brought them to the works of the Edgar Thomson Steel Company, where the visitors were initiated into the mysteries of the manufacture of steel rails.

The works of the Edgar Thomson Company are reputed to be the most perfect of the kind in the United States; and many and varied were the expressions of astonishment and delight, to be heard upon all sides, at the beauty and novelty of the sights there witnessed. At three P.M. the start for the return to Pittsburgh was made, the objective point being the works of the Pittsburgh Gas Light Company. These were soon reached, and the party was received with open arms by the genial and accomplished Engineer, Mr. J. H. McElroy, who at once surrendered the entire establishment to the invading forces.

The works were inspected in detail; and it appeared to be the general verdict that the phenomenon of gas "at a dollar a thousand" might in great part be due to the excellence of the arrangements there beheld. The premises being thoroughly "done," the next move was a return to the Monongahela House, and a general brushing-up indulged in by all hands as a preparation for the coming "feast of reason and flow of soul," which was to be inaugurated in the shape of a banquet to be in readiness at seven P.M. This part of the record will be described by another pen than ours some time a little later on; but we will venture the assertion that Pittsburgh, in the staid and sober land of Penn, had never before witnessed a more friendly gathering nor a better time.

Nothing but the greatest praise can be given to the excellence of the arrangements of the local committee, and the exertions of its chairman, Dr. D. Hostetter, to make everything comfortable and pleasant for the members of the Association and its guests.

The Association decided to adopt the amendment to the Constitution, proposed at the meeting in Boston last year, limiting the occupation of the presidential chair to one term. This year the choice of the Association has been n the selection of Mr. Theobald Forstall, of New Orleans, La., as its next presiding officer, and we congratulate them and him upon the result. The Association will hold its next annual meeting in New York city.

A DISTRESSING ACCIDENT.

Mr. William Gardner, of Pittsburgh, Pa., has met with a sad affliction. His eldest son, a bright and promising lad of about twenty years of age, while alighting from a railway car, missed his footing and received injuries of such a nature as to cause his death.

ELECTRIC UNITS.

Owing to the pressure upon our columns, caused by the publication of the proceedings of the American Gas Light Association, the continuation of the article, by M. Monnier, on the "Values of Electric Units," is unavoidably delayed.

Electric Lighting in Chesterfield, England.

A late Number of *Engineering* contains this paragraph relative to the attempted electric lighting scheme at Chesterfield, England—

"The experiment of lighting by electricity at Chesterfield has not so far proved successful. It will be remembered that about a year ago, owing to differences with the gas company, the Corporation determined to abandon gas for street lighting, and to illuminate all the streets with arc lamps. The contract was entrusted to the Hammond Company, and it was decided to use both arc and incandescent lamps. After a long delay the work has recently been handed over by the contractors as complete, but according to the Town Council it is little less than a dismal failure. In a letter addressed to the papers Alderman Gee says, 'The Lane-Fox lamps which have been supplied by the Brush Company are most variable in their lighting power, whilst some are good, others only give a feeble light, instead of a light equal to that of fifteen candles as expected. The arc lights are doing good service in some of the large streets, but as a whole I think it has been fully demonstrated in a year's trial in Chesterfield, that the field for arc lighting is very limited indeed.' The inhabitants of the town do not appear inclined in any single instance to abandon gas, and the disappointment at the result of this enterprising experiment is very great.

"Judging from the success that has attended the electric lighting of streets elsewhere we suspect that the fault lies chiefly with the mode of installation; the defective Lane-Fox lamps can doubtless be replaced by perfect ones, and probably a better distribution of the arc lamps could be effected. Alderman Gee's letter is a timely one, now that so many municipal bodies are turning their attention ardently to the question of abandoning gas."

The Petroleum Outlook.

The rapid falling-off of the production of the Cherry Grove field, with the incidental advance in prices, has given considerable stimulus to new operations; and should present prices be maintained for a time, we may reasonably look for great activity in the producing region.

The situation has not materially changed since our last issue. The production of Cherry Grove having fallen to about eight or ten thousand barrels per day, seems fairly to maintain itself at that, and no further rapid deline is to be expected from this field at present. In the Bradford and Richburg fields the production shows but little change; or at best but a slight decline which will in all probability be more than overcome by the new drilling there. Meanwhile the prospect of a new field in Forest county still hangs threateningly over the trade. A number of wells are now drilling in this district, several of which will in all probability be finished before our next issue, and will then afford us better data for estimating the character of this field.

The stock of refined in Europe continues large, and exporters are taking oil quite sparingly.

Taking the large burden of our crude stocks, the excessive stock of refined abroad, and the fact that the present production with all the estimated decline is yet considerably in excess of the average daily consumption for the year. And adding to this the fact of the great hope and activity that is infused into the producing element, by an advance to 95 cents, we can see but very little reason for a permanent decline in production, or a permanent advance in market values.

The situation is altogether different from that which existed, when we had high prices, several years ago. Then we had small stocks, and comparatively few were in the business. Now we have excessive stocks, both at home and abroad, and many men of great skill and greater activity than ever before known in the trade.—*Petroleum Reporter.*

Gas Heating in the Potteries.

The London *Journal* says that the gas apparatus exhibition now open at Burslem is a noticeable advance, in point of principle, on the majority of exhibitions of the same class. In general these enterprises are not constituted with any particular object on the part of their promoters beyond the extension of the use of gas stoves for domestic purposes.

This is a very worthy motive in itself, and has as much force in one locality as in another; for cooking goes on everywhere, and a gas stove possesses equal advantages in a manufacturing and residential town. Burslem, however, is the center of the potter's trade, which is no less remarkable for the beauty of its productions than for the smoke and dirt among which they are made. There is happily no reason for the continuance of much of this old reproach of pottery towns; since it can now be shown, by actual demonstration, not only that an efficient smokeless kiln may be constructed, but that the work can be done by it at a cheaper rate than by the old sooty method. One of the principal reasons, it may be assumed, for the holding of the present exhibition at Burslem, was to make the representatives of the local trade acquainted with the good work that is being done by the Thompson gas kilns and muffles, which have already conquered their position in the glass works of London and in many provincial towns.

Whether the same description of plant can be successfully adapted to satisfy the severe requirements of porcelain manufacture can only be proved by experience. It is claimed that this can be done; and, in the event of such a desirable result, the benefit to the Potteries district can scarcely be overestimated. With the abolition of reeking kilns—to say nothing of the improvement in the manufacturing process—will come an amelioration in the condition of the potter's country not to be valued in money. Money, too, will be saved. This, of course, is a most important consideration; for, without it, the less tangible advantages of the use of gas for fuel might wait long for their welcome.

The Burslem Corporation deserve praise for their action in directing local opinion towards a reform which may yet alter the aspect of their town and district; and the manager of the Corporation gas undertaking (Mr. Peaty) must be congratulated on the success which has attended his efforts in organizing an exhibition so eminently adapted to local necessities.

Coal Mining at Great Altitude.

Among the coal mines rapidly being developed in New Zealand is one situated near the town of Westport, on the west coast of the Middle Island, which is distinguished by two remarkable, if not unique, features—the thickness of its coal seams, which range from 6 ft. to 53 ft. 6 in. in thickness, and the fact that these enormous deposits are placed, and can be easily worked, at an altitude of from 800 to 3000 feet above sea level. Some of these seams are exposed on the faces of the cliffs, and can be got at with the greatest ease by tunneling. Besides the comparative immunity from ordinary accidents, which this remarkable deposition of the coal affords, there is the further advantage that the mines are absolutely safe from floods, and almost, if not quite, secure from the risk of explosion from fire-damp. There is the further advantage that the coal can be loaded on board ship by gravitation, the danger and expense of hauling the coal up a deep perpendicular shaft being entirely avoided.

[Official Report.]

Tenth Annual Meeting of the American Gas Light Association.

Held at the Monongahela House, Pittsburgh, Pa.,
October 18, 19, and 20, 1882.

Morning Session—Oct. 18.

The Association was called to order at 11 o'clock by the President, Gen. A. Hickenlooper.

The minutes of the last annual meeting having been published in the American Gas Light Journal, their reading was, on motion of Mr. Slater, dispensed with.

ROLL CALL.

Upon the call of the roll, the following members were reported as present:

Allen, A. L., Poughkeepsie, N. Y.
Allyn, H. A., Cambridge, Mass.
Avery, A. J., Dunkirk, N. Y.
Andrew, John, Chelsea, Mass.
Averill, A. T., Cedar Rapids, Iowa.

Battin, Isaac, Albany, N. Y.
Baxter, W. H., Petersburg, Va.
Butterworth, T., Rockford, Ill.
Burtis, P. T., Chicago, Ill.
Baumgardner, J. H., Lancaster, Pa.

Cartwright, J., Fishkill-on-H'n, N.Y.
Cartwright, M., Rochester, N. Y.
Cartwright, W., Oswego, N. Y.
Coggshall, H. F., Fitchburg, Mass.
Coombs, Jr., M., Youngstown, O.
Cowing, J. H., Buffalo, N. Y.
Curley, T., Wilmington, Del.
Cabot, J., Lawrence, Mass.
Collins, A. P., New Britain, Conn.
Copp, A. M., Boston, Mass.
Coyle, P., Charlestown, Mass.
Calahan, W. P., Dayton, Ohio.

Davis, F. J., Waltham, Mass.
Denniston, W. H., Pittsburgh, Pa.
Edgerton, H. H., Stamford, Conn.
Diall, M. N., Terre Haute, Ind.
Dickey, R. R., Dayton, Ohio.

Farmer, W., St. Louis, Mo.
Floyd, J. R., New York, N. Y.
Forstall, T., New Orleans, La.
Flemming, D. D., Jersey City, N. J.
Fogarty, T. B., Brooklyn, N. Y.

Gates, F. W., Hamilton, Ontario.
Gerould, L. P., Manchester, N. H.
Goodwin, W. W., Philadelphia, Pa.
Greenough, M. S., Boston, Mass.
Guerard, A. G., Savannah, Ga.
Griffin, J. J., Philadelphia, Pa.

Harbison, J. P., Hartford, Conn.
Helme, W., Philadelphia, Pa.
Hickenfooper, A., Cincinnati, Ohio.
Hookey, G. S., Augusta, Ga.
Hopper, T. C., Philadelphia, Pa.
Howard, L. J., St. Louis, Mo.
Hequembourg, C. E., Bradford, Pa.

Keith, E., Taunton, Mass,
King, J. O., Jacksonville, Ill.

Lindsley, E., Cleveland, Ohio.
Littlehales, T., Hamilton, Ontario.
Learned, E. C., New Britain, Conn.

McCauley, L. G., Westchester, Pa.
McElroy, J. H., Pittsburgh, Pa.
McIlhenny, J., Philadelphia, Pa.
Nettleton, C. H., Derby, Conn.
McMillin, E., Ironton, Ohio.
Morris, H. G., Philadelphia, Pa.
McDonald, W., Albany, N. Y.

Parritt, W., Bloomington, Ill.
Pearson, W. H., Toronto, Ont.
Price, W. H., Cleveland, Ohio.
Prichitt, S., Nashville, Tenn.
Pratt, J. C., Jamaica Plain, Mass.
Page, G. S., New York, N. Y.
Parrish, W., Seneca Falls, N. Y.

Rankin, B., Louisville, Ky.
Raynor, C. H., Adrian, Mich.
Richardson, G., Wilmington, Del.
Rollins, J. H., Worcester, Mass.
Root, F. M., Connersville, Ind.
Ramsdell, G. G., Vincennes, Ind.
Richardson, F. S., N. Adams, Mass.

Sherman, F. C., New Haven, Conn.
Slater, A. B., Providence, R. I.
Smith, M., Wilkes-Barre, Pa.
Somerville, J., Indianapolis, Ind.
Vanderpool, E., Newark, N. J.
Spencer, R., Burlington, Iowa.
Starr, J. M., Richmond, Ind.
Smith, J. H., Newark, Ohio.

Watkins, E. T., Chicago, Ill.
White, C. A., New York, N. Y.
White, W. H., New York, N. Y.
Williams, J., Johnstown, Pa.
Young, R., Alleghany City, Pa.
Wood, A. C., Syracuse, N. Y.
Wood, G., New Bedford, Mass.
Weber, A., New York, N. Y.

NEW MEMBERS.

Applications for membership from the following gentlemen were presented by the Secretary:

Anderson, J., Cincinnati, Ohio.
Baxter, I. C., Evansville, Ind.
Cole, T. W., Altoona, Pa.
Cressler, A. D., Fort Wayne, Ind.
Dingee, F. A., Philadelphia, Pa.
Axworthy, T., Cleveland, Ohio.
Byrnes, T. E., Brooklyn, N. Y.
Corbett, C. H., Brooklyn, N. Y.
Edwards, G. B., New York, N. Y.
Floyd, F. W., New York, N. Y.
Floyd, H. E., New York, N. Y.
Gridley, E. B., Bloomington, Ill.
Hyde, G. A., Cleveland, Ohio.
Hopper, W. R., Philadelphia, Pa.
Leach, H. B., Taunton, Mass.
McCullough, E. H., Phila., Pa.
Perkins, J. D., New York, N. Y.
Robinson, W. L., Uniontown, Pa.
Smedberg, J. R., Lancaster, Pa.
Stein, E., Sterling, Ill.
Walker, Jr., J. H., St. Louis, Mo.
Findley, J. H., Ogdensburg, N. Y.
Hallett, J. L., Springfield, Mass.
Learned, W. A., Newton, Mass.
McDougall, J., Hornellsville, N. Y.
Ross, A. Q., Cincinnati, Ohio.
Sprague, C. H., Boston, Mass.
Tayler, G. H., Warren, Ohio.
Young, J., Pittsburgh, Pa.

On motion of the Secretary, the applications were referred to Messrs. Nettleton, Ramsdell, and Allyn, as a committee, for approval. The committee reported that they had examined the several applications, that they were correctly certified to, and recommended that they be received.

On motion, the Secretary cast the vote of the Association for the nominees, Messrs. Slater and Greenough acting as tellers; and all of the gentlemen named were declared unanimously elected to membership.

The newly elected members were then introduced to the convention and welcomed to membership.

PRESIDENT'S ADDRESS.

The President then delivered the following address:

Members of the American Gas Light Association: Gentlemen—To be called upon to preside over the deliberations of a society composed of the representatives of an industry so closely identified with every phase of progressive civilization is indeed a compliment of which I am justly proud; and yet I cannot but think that the objects and purposes of the selection would have been best subserved by conferring this distinguished honor upon some one of your very many more experienced engineers or worthy superintendents, whose longer service, wider range of observation, and more intimate knowledge of the details of manufacture have certainly endowed them with peculiar fitness for a more satisfactory discharge of the duties of such a position. But as I stand second to none in a full appreciation of the advantages to be derived from the meetings of such an association as this, I shall certainly do my best to properly perform the duties assigned me.

Fully recognizing the fact that an inaugural address is of but little practical importance, and certainly the least interesting and instructive part of our proceedings, I shall refrain from indulging in remarks covering portions of the ground which are likely to be more carefully explored by the gentlemen who are to favor us with papers, and only as briefly as possible refer to some few points more closely identified with the administrative than with the executive departments, and therefore less likely to be touched upon in your discussions.

Another year, with its disappointments and its triumphs, its troubles and its joys, has passed away, and we find ourselves once more gathered together for the purpose of comparing notes, exchanging views, discussing various matters of interest and importance connected with the profession we represent, and enjoying, for a few brief hours, the pleasures of another social reunion.

But one chair is vacant—George Dwight's. Of him it has been well said: "His sound practical judgment, his honesty of purpose, his integrity of action, made him one of those to whom all looked with consideration and confidence in either the emergencies or the practical routine of life. Others may succeed to the places of honor and trust he has filled in the various associations of which he was a member, but none can exactly fill his place in the hearts of those who knew him best."

While to a large majority of the gentlemen present have been entrusted the very important duties and grave responsibilities of the practical management of works, let us not forget that to others who are with us has been left the no less difficult and more delicate duty of shaping and defining the policy which shall govern and control the business affairs of their respective companies; in the performance of which duties many new, complicated, and important problems are constantly arising, requiring great care and careful consideration in their solution. Ever recurring questions of governmental or municipal interference and control must be promptly met and settled. And so varied are the interests of this industry and the characteristics of our people, that measures which are one year rejected may during the following year be considered essential to success; or a line of policy suited to one locality may totally fail in another; and, in the case of failure, upon their heads fall all the imprecations, and into their ears are poured all the complaints of querulous and dissatisfied consumers, as well as the mutterings of disappointed and distrustful stockholders.

In other words, gentlemen, while you are pulling away at the bow oar, properly claiming credit for much that has been accomplished, forget not

the troubles, cares, and responsibilities of the man at the helm, who safely pilots you over many hidden, but none the less dangerous, reefs.

The growth and magnitude of the industry thus controlled may be best appreciated when we recall the fact that scarcely more than a young manhood's age has passed away since commercial success attended the first introduction of gas in this country, and yet there are to-day over 700 works in active operation, representing an invested capital of 210 millions of dollars, giving employment to nearly 25,000 men, and annually producing 30 billion cubic feet of gas.

I very much doubt if any one of the very many new and varied enterprises for which this age has become so distinguished has exceeded in commercial importance, has conferred more benefits upon society, or has more materially aided or beneficially influenced the destinies of mankind, than the industry you represent. And, yet, strange as it may appear, none have had to combat such unfounded prejudices, surmount greater obstacles, or more persistently and continuously fight its way to success through the most determined hostility and opposition of the very class of citizens most benefited by its introduction. For such a condition of affairs there is certainly no valid reason, and it can only arise from a failure to comprehend or properly appreciate the relations which one should bear to the other. It is true that some of these men are "chronic contestants," whose chief delight is found in misconstruing the motives of friends or denouncing the projectors of enterprises which may remotely interfere with their own selfish purposes and interests. Others have no personal interests to be affected, but are swayed by an envious or selfish disposition which leads them to feel unhappy when they find any other business more prosperous or successfully managed than that in which their own money is invested; while there are still others, who, without being able to assign any special reason—except possibly that it may magnify their own local or political influence—are at all times ready and anxious to abuse corporate interests of every character and kind which have about them the slightest traces of what they are pleased to term monopolies. While it is true that many of the causes ordinarily assigned for this unseemly opposition are totally groundless, and others so shrouded in mystery as to be beyond the ken of mortal man to determine "whence it comes and whither it goeth," it is equally true that the gentlemen entrusted with shaping the policy which governs and controls the affairs of their respective companies may, by careful attention and judicious management, be able to do much toward disabusing the public mind of erroneous impressions, and remedy many of the evils under which we have heretofore labored, and which still exist to such an extent as to impair our usefulness to the community, and seriously interfere with our own complete and permanent success.

It is true that our business, its peculiar necessities and its exceptional relations to the public, are of a character that to some extent warrants the assertion that we are monopolists; but we are so only in the most restricted sense of that term, fully justified by the obligations ordinarily imposed, and the manifold advantages accruing to the consumer as well as to the producer. For reason and experience have clearly demonstrated that without the protection afforded by an incorporation and maintenance of some of the governing principles of a monopoly, it would not only be impossible to do justice to the public, but it would be impossible to exist, except in a constant state of warfare, entailing upon the producer a useless and unnecessary expense, which must, in the end, be borne by the consumer.

While the protection afforded by such exceptional grants is absolutely necessary to a proper and economical administration of the affairs of gas companies, and may, at times seem to warrant a rejection of some portions of the unwritten laws governing ordinary mercantile transactions, it must not be forgotten that the public have certain rights which we are in honor bound to respect, and that even regulated monopolies, if not conducted on just and liberal principles, are liable to alienate public sympathy and support. Care should therefore be taken that no such privileges be abused, or their possession be made the excuse for taking any undue advantage of the consumer. Equal and exact justice should be the guiding star of all our actions, for the claims of the producer and consumer are alike entitled to just, fair, and liberal consideration.

The capitalist who invests his money in an enterprise of this character is certainly entitled to a reasonable return, over and above a proper allowance for its risks and responsibilities. All above this should go to the consumer, either in the shape of reduced prices, higher illuminating power, or increased liberality and efficiency in the general administration of the company's affairs.

Just what this return to the stockholder should be depends much upon local conditions, value of money, capital necessarily invested, and prospects of improvement in the locality where the works are situated. Personally, I regard as fair and reasonable that provision of the English law which provides for a sliding scale—10 per cent. dividend and 10 per cent. reserve. Taking into consideration the difference in the value of money there and here, I believe this to be a clear indication of the policy which should govern the policy of the gas companies of this country, so far as price is concerned. In other words, they should be permitted to acquire a reasonble reserve to cover contingencies, and make a dividend of 12 per cent. on a capital of $8 per thousand cubic feet production, and whatever profit there may be in excess of this figure should revert to the consumers in the shape of a reduction in price.

While it may be true that very many companies are now unable to make this dividend, and very few exceed it, the public are very generally under the impression that their earnings are much greater, and will be reasonably well satisfied could they be assured that under no circumstances will any greater profit than this be exacted. I do not, however, wish to be understood as advocating the passage of general laws bearing upon this particular point, for all such are more or less inquisitorial in their character, and are not infrequently made the instruments of great annoyance and abuse, but rather do I advocate that you avoid the necessity for such legislation by a voluntary compliance with the intent and spirit of such enactments.

In all our dealings with public as well as private consumers the utmost impartiality should be observed; there should be but one price, and that price adhered to under any and all circumstances. I regard the almsot universal practice of giving to the municipality the gas used for public lighting at a price considerably lower than that charged private consumers a grave mistake, based upon a short-sighted and improvident policy, the practical effect of which is to restrict consumption, render equitable reduction impossible, and to impose upon our own patrons an excessive and unjust proportion of the expenses of public lighting, instead of making it a tax upon the general public, where it properly belongs.

To illustrate more clearly the injustice of this practice, I refer you, as an example, to Covington, Ky., where they now charge private consumers $2.50, and under their contract are compelled to furnish the public lamps at one-half the price charged her citizens; one-fifth being public and four-fifths being private gas, the average received is but $2.25. The gas consumers are therefore—in addition to the payment of their proportion of the tax levied for this purpose—compelled to carry an additional burden of one-tenth the entire expense of the public lighting. And the gas company is, under these peculiar circumstances, compelled to maintain this price to private consumers in order that they may avoid being compelled to furnish gas to the city at less than the cost of production.

With the general increase of knowledge and growing familiarity with the subject, our business relations to the public have been constantly changing, and will in the near future be subject to still greater changes. This industry is no longer regarded as a secret process full of complicated mysteries, but as a simple manufacturing industry, the details of which are fully understood and clearly comprehended by the intelligent portion of the community.

While many years of hard and persistent work were necessary to overcome local prejudices against the general use of gas as an illuminant, we have now to overcome the no less formidable prejudices which invariably attend the introduction of all innovations upon established customs, or preconceived opinions of its proper use. It need not therefore be thought strange that, in the absence of intelligent direction and personal application, the public appear slow to appreciate its many advantages for culinary and manufacturing purposes. More rapid progress can and should be attained by throwing aside professional reserve, and injecting into our management the same energy and zeal that marks the course of any other successfully conducted business enterprise. Canvassers should be employed, and printer's ink much more liberally used in direct advertisements, local notices, and communicated articles, discussing freely its convenience and safety under all ordinary conditions, its manifold advantages over other illuminants now in the field, and, finally, its adaptability to various domestic and industrial purposes.

But a partial, and in many respects imperfect, application of these business principles has, within a period of two years, resulted in placing over 1,200 gas stoves and 40 gas engines in the hands of the citizens of Cincinnati alone; in which city there was last year consumed 40 million bushels of caking coals, of which quantity 21 million bushels were used for steam and manufacturing purposes, 17¼ million bushels for household uses, and 1¾ million bushels for making gas. It will thus be seen that of the total used but 4¼ per cent. was carbonized, while 43 per cent. was used for various domestic purposes.

While much has recently been accomplished, the necessity for placing ourselves in a condition to meet this new demand, and the probable requirements of the future, now calls for renewed efforts toward securing a reduction in working expenses. Not by the arbitrary reduction of wages, neglect of repairs, sacrifice of extensions and improvements, or by depreciating the general character and efficiency of the service through the employment of less able and talented management; but rather by pursuing just the opposite course.

In our own interests, and in the interests of our consumers, we should demand a thorough revolution in the character of the burners supplied, in order that there may be a less wasteful and more perfect utilization of gas

used. Regenerative furnaces, or their equivalent, must be constructed; new and improved settings be introduced; higher heats must be maintained, with less expenditure of fuel; residual products must be made more valuable; and, finally, the handling of the coal, charging and discharging of retorts, and the removal of the coke, must all be accomplished through the agency of steam stokers, and supplemented by new and improved apparatus and labor-saving machinery, in order that we may be able to meet what will soon be the almost universal demand for gas, at a price that will justify its use for domestic and industrial purposes. If this be done, the consumption will become much more general, its manufacture more regular and profitable, and the public will no longer have cause for complaint.

In this age of progress, the controllers of such an enterprise who halt or hesitate, if but for an hour, are left just that far behind the swelling tide; so if the "old-time" manager, whose chief boast is length and not character of service, has failed to note the progress of events or arouse himself to a proper appreciation of the necessities of the hour, his days of usefulness are numbered, and the sooner he retires to the shades of private life the better it will be for the company he represents; for I firmly believe that the time is not far distant when public sentiment will demand, and engineering talent make possible, the delivery to the consumer, in gaseous form, of at least one-half the fuel now used for domestic purposes. And it is not improbable that some of the gentlemen now present may live to see the day when gas—with its resultant coke—will be so universally considered the cleanest, cheapest, and most convenient fuel for domestic and manufacturing purposes, that raw coal will be seen only at the mine, or en route for the gas works.

This result can be most economically accomplished through the instrumentality of the bunsen burners, or some similar appliance located at the point of consumption, by which the enormous outlay of capital necessary to a duplication of mains, services, and meters may be avoided.

Existing gas companies now occupy this promising field, and are better prepared for a satisfactory performance of this service than any new organization can possibly be; and it now rests with them to earnestly consider the policy of promptly meeting this public want. Nearly if not quite all the gas required for such purposes will be "day," and a considerable portion "summer" gas; thus making available and remunerative the capital invested in plant, mains, services, and meters, which now lies idle and unproductive for 10 hours out of 24, and during at least 4 months out of 12. Could the send-out of any gas company be quadrupled, or even doubled, without necessitating a corresponding increase of capital, the price could, without loss of profit, be fixed at a figure that would appear ridiculously low as compared with prices now prevailing.

One of the most effective guides to economical production and distribution will, in my judgment, be found in the adoption of a more uniform, exact, and detailed system of recording working expenses; and many incidental advantages accrue from an exhibition of less jealousy and distrust in communicating information thus gained. Such records should, under certain necessary restrictions, be made exchangeable between companies of the same class; and each could then, at a glance, determine in what particular direction their efforts could be more effectively directed toward securing better results.

Unlike other industrial pursuits, the manufacturing operations of a gas company cannot be suspended for a single moment without entailing upon the public serious annoyances, if not dire calamities; they are therefore peculiarly liable to dangers arising from any disturbance of harmonious relations between capital and labor, or differences which may arise between the employer and employed. For this reason the greatest possible care should be exercised in seeing that all reasonable causes for complaint are removed, and your employees treated with that consideration due to existing conditions. But such troubles not infrequently come without just cause, at a time when least expected, and in a shape that may tax to the utmost the wisdom and prudence of the manager. It is therefore a duty you owe the public, as well as the interets you represent, to "in time of peace prepare for war," by immediately securing and introducing into your works all the modern inventions and mechanical appliances which will in any manner decrease the necessity for an exclusive dependence upon manual labor. And if we are, by force of circumstances, compelled to bear burdens incident to the existence and possible action of such associations, I know of no reason why we should not avail ourselves of the advantages of similar combinations; for certain it is that there are few other manufacturing enterprises in this country which have not to some extent enjoyed the benefits and protection of such an alliance, which in many cases has made success possible where otherwise competition, different, varying, and conflicting lines of policy would have brought disaster and ruin.

While it is true that this Association has accomplished much in the way of improving our methods of manufacture, I cannot but think that there should be a still more intimate understanding and stronger bond of union between our companies; that the gas interests of each State should form a close association for mutual assistance and protection, through the instrumentality of a board of officers, appointed each year to faithfully consider and pass upon questions of difference which may arise between gas companies and their patrons and employees. That their decision should be based upon a sincere desire to do exact justice; but when once rendered should be sustained by all the moral and pecuniary influence and power of the entire gas interests of the State. That this organization should be still further extended by the organization of a National Board of Control, consisting of one delegate from each State association, whose duty it should be to consider matters of business affecting the interests of this industry reaching beyond the scope of State combinations.

While this is neither the time nor place to enter upon a discussion of the details of such an organization, I may be permitted to call your attention to a few of the very many ways in which such a combination will be of advantage to the interests which we represent, bearing in mind that where the results of study, experiment, and labored research, all involving expense, are so freely communicated for mutual benefit, the burdens should not be allowed to fall upon those who have the nerve and enterprise to take the lead.

Concentrated action could be made to take the place of the very numerous and costly experiments independently conducted and many times repeated. They could better investigate the merits of new inventions and mechanical appliances, and secure the right to use such as are worthy of adoption. They might be able to accomplish the aggregation and more perfect utilization of our residual products, where individual action cannot hope to succeed. Under the patronage and direction of such a Board, gas companies could better protect themselves from the raids of the professional blackmailer, whose weapons of warfare are the "patented process" and "opposition works." And, finally, they could be instrumental in defeating unjust and oppressive legislation, or in securing the enactment of general laws which, while fully protecting the interests of the consumer, will at the same time define the rights and obligations of the manufacturer with an exactness that can afford no reasonable grounds of dispute. Such legislation having been secured, the "defensive policy," which has so long marked and marred the administration of gas interests, should be forever abandoned. While it should be our aim to be just, and even generous, in all our dealings with the public, promptly conceding every privilege that they may rightfully enjoy, we should be equally earnest in demanding the exact fulfillment of all contract obligations.

If doubtful questions arise requiring interpretation, avoid temporizing; meet the issue fairly and squarely, by insisting upon an immediate decision, even if it be at the end of an ever to be dreaded lawsuit. Make the public feel and understand that while you are sincere in efforts to do right, you are determined that they shall be governed by the same principles of equity, justice, and common sense.

In conclusion, gentlemen, it affords me pleasure to be able to congratulate you upon the very satisfactory and prosperous condition of your business interests, and the bright future which is now opening before you. The long period of depression has passed away, and upon every hand may be heard the music of the hammer and the clear ring of the trowel, hastening forward the now, more than ever before, needed improvements and extensions necessary to meet rapidly increasing consumption.

The public have been aroused to a full appreciation of the economical and incidental advantages of gas as a source of limited power in manufacturing and industrial establishments, and are now being rapidly educated up to a knowledge of the fact that it furnishes the safest, cleanest, and most economical fuel for domestic purposes. And last but not least, the electric light cloud, so threatening in its appearance as to indicate an approaching cyclone, whose gathering fury would sweep our chosen industry from the face of the earth, has gradually and quietly spread itself over the horizon, and settled down into a gentle breeze that fans rather than extinguishes the flame. The long familiar and enchanting terms, "the rival of daylight," "magnificent spectacle," "incomparable brilliancy," "dazzling effulgence," etc., have passed away, and in their place are now heard only such modest assertions as "it can no longer be a matter of reasonable doubt that the electric light will take its place as a public illuminant." Just what this place will be has not yet been definitely determined, but certain it is that until some method of generating and distributing electricity less expensively than any now known has been devised and carried into practical effect, our interest has little to fear from its assumed rivalry. On the contrary, I believe it to be to the pecuniary interest of gas companies to assist and encourage its introduction, as a means of familiarizing our people with a more brilliant and expensive illumination of our streets and thoroughfares, which will undoubtedly call for a corresponding increase of interior lighting and consumption of gas.

I may also be permitted to congratulate you upon the growth and prosperity of your Association. It cannot but be a matter of self gratification to the originators and founders of this Association to witness its gradual development and rapid progress up to its present condition of usefulness. It is indeed difficult to realize that the first regularly organized meeting of this

Association was held October 15, 1873—but nine years ago—with 23 members present, and a sum of less than $30 in the treasury with which to meet current expenses. To-day you have the very comfortable balance of $1,500 to your credit, and upon your rolls are borne the names of 223 of the most prominent representatives of the gas interests in this country. I feel confident that, with wise and judicious management, the membership may be greatly augmented, and its scope of usefulness be broadened and extended, until its beneficial influence will be felt and acknowledged wherever gas lighting is known.

REPORT OF THE EXECUTIVE COMMITTEE.

The Secretary—In behalf of and as Secretary of the Executive Committee, I beg leave to make the following report:

The Committee have examined the following papers, and recommend that they be read:

"The Future of the Gas Interest," by Mr. J. C. Pratt.

"New Process of Making Water Gas," by Mr. T. B. Fogarty.

"The Manufacture of Gas from Coal, and from Material other than Coal," by Mr. A. L. Allen.

"Regenerator Furnaces," by Mr. Adam Weber.

"Heating by Gas," by Mr. H. H. Edgerton.

"A New Method of Teaching Chemistry," by Mr. William Farmer.

I believe that there are in the possession of the writers two or three other papers, which they have neglected to present to the Executive Committee. Any member of the Association having prepared a paper which he is desirous of reading, will remember that it is necessary that the paper shall first be presented to the Executive Committee for its approval before it can be read to the Association. The Executive Committee have referred this matter to the determination of the President and Secretary, and there need, therefore, be no delay if the members will present their papers at once.

The usual list of delinquents for non-payment of dues was referred to the Committee, and the usual action taken. Those who have neither paid their dues nor expressed their intention to pay, will be dropped from the rolls.

The Executive Committee have adopted the following programme for the sessions of the Association: On Wednesday morning, meet at 10 o'clock and adjourn at noon; meeting again at 2:30 and adjourn when the business of the Association shall have been completed. The same hours have been adopted for the sessions to-morrow.

The Committee have received an invitation from the Pittsburgh Gas Co., tendering to the Association a trip to the coal fields, to the steel works of Edgar Thomson, and to a dinner on Friday evening. The Committee recommend the acceptance of the invitation, and that the thanks of the Association be tendered to the Pittsburgh Gas Company for their courtesy.

There was referred to the Executive Committee, at the last meeting of the Association, the following proposed amendment to the Constitution:

"That the office of President of this Association shall be filled for a single term only by its incumbent, and he be then ineligible for immediate re-election."

A discussion was had upon the matter at the last meeting, and under the Constitution it was then laid over for one year, and the Executive Committee was ordered to report upon it. The Executive Committee now report that they concur with the resolution, and therefore recommend the adoption of the resolution amending the Constitution in the way proposed.

The Committee have no further report to make at this time.

On motion, the report of the Committee, as read, was received.

The suggestion of the Committee with reference to the dropping of delinquents was left to the Executive Committee, with power to act.

The arrangement of the Committee, as to the hours of session, was, on motion, approved.

On motion, the invitation of the Pittsburgh Gas Company, was accepted, with the thanks of the Association, and the Secretary was directed to so notify the Local Committee.

The recommendation of the Committee, with reference to the proposed amendment to the Constitution, then came up for consideration.

Mr. Harbison—Mr. President, I will favor the adoption of that recomendation, if the term of office is limited to two years instead of to one year. I think we should not make a member ineligible to election to the office of President after a single year's service. If you will lengthen the term of office I will favor the recommendation.

The President—The motion has been very fully discussed in the Executive Committee, and, while there was a difference of opinion among the members, they were pretty clear in their determination; and I think it would be hardly necessary to refer the matter back to them for discussion or report.

Mr. Price—I move that the report of the Committee be adopted.

Mr. Helme—I, for one, do not see the wisdom of limiting the eligibility of the President to one year. It has not yet been done in any single case. I favor Mr. Harbison's recommendation to make the President of the Association eligible for two terms; but I think that three years would be better than two. I move to amend by making it three years.

Mr. Greenough—I brought this matter before the Association last year, not as the gentleman who then occupied the chair understood, or as the gentleman who now occupies the chair understands, with any intention of reflecting in the slightest degree upon their management of the business of the Association, but simply because I thought it would be advisable for us to follow the example which has been set us in other associations of longer standing than ours. It is the custom of the English association to change their officers every year; the same custom also obtains with the French association. The result of that is that each officer, in taking charge of the affairs of the Association, brings to it a desire not only to do himself credit, but to bring before the Association his ideas as to any novelties which may have come under his notice in the course of the preceding year. The address of the Chairman of the British Association is always one of the principal features of the meeting, as it is expected that he will closely review the general business of the profession. When a President has done that once it would be almost impossible for him to produce such a review the second time without doing himself injustice or wearying the members. If it is possible to re-elect a member as President, we shall, of course, do so, as it would seem, after the custom which has obtained in the past, to be almost a reflection upon any gentleman not to re-elect him President, after having re-elected each of his predecessors. I think the motion made by Mr. Helme is unnecessary, because, as it is at present, we can go on and elect a gentleman as President for three years without making any change in the Constitution. To make him eligible for two years only, requires a change. It seems, however, to the Executive Committee, as it does to the present and past Presidents, strongly desirable to change the Constitution in the manner now proposed. If the Association does not agree to do it, they can reject the report of the Executive Committee.

Mr. Price—I beg that my friend Greenough will not think that I regard his resolution as any reflection upon myself or upon the management of the office while I occupied the chair. I did not intend that anything I said should be so interpreted, for I have no feeling whatever of that kind. Having occupied the chair for three successive years, I have experienced precisely the difficulty that Mr. Greenough has spoken of—that of producing three addresses which shall be either satisfactory to one'sself or acceptable to the Association. It is a matter of some considerable importance to the man who occupies the chair of President of this Association. Those who were present at the meeting in Chicago will remember that I protested against being elected the third time; and I have always felt that if there were any honor in the office it ought to be distributed among the members of the Association generally. There are certainly enough gentlemen in this Association who are available as Presidents, and who would do honor to the office, to warrant us in electing a new President at each annual meeting. If we make the President eligible to election for two years only, the natural result would be that if a gentleman who has occupied the office for one year should not be re-elected, he would feel that some slur had been cast upon him. I like the British and French plan much better. For these reasons I heartily favor and move the adoption of the resolution.

Mr. Harbison—I was not present at the meeting a year ago, and therefore do not know the reasons which induce Mr. Greenough to introduce this matter; but after his explanation and the reasons assigned for it, I heartily concur, and second the motion of Mr. Price to adopt the resolution recommended by the Committee.

The President—I most heartily indorse the resolution offered by Mr. Greenough. I do not doubt the ability of the members of this Association to prepare three or four, or even five annual addresses which shall be creditable to themselves and instructive to the Association; but I think that the honor of election to the presidency should be more generally conferred upon the members of the Association than would be possible if we elected the same gentleman for two or more terms. Even if we make a member eligible to the presidency for one year only, it will take at least 233 years for the honor to go round (laughter); and I think we had better, therefore, shorten the term of service, so as to give everyone a chance.

The recommendation of the Committee was unanimously adopted.

TREASURER'S REPORT.

The Secretary read the Treasurer's report, as follows:

Receipts.

To cash balance, Sept. 30, 1881	$811 29	
Initiation fees	290 00	
Dues for year 1882	495 00	
Dues for year 1881	140 00	
Dues for year 1880	15 00	
Interest account	43 56	
		$1,794 85

Disbursements.

Total receipts		$1,794 85
Salary of Secretary and Treasurer	$300 00	
Printing and stationery	65 50	
Expenses of Boston meeting	52 00	
Postage stamps	15 00	
Returned estate S. A. Dickey	10 00	
Sundries	2 12	
Balance in savings banks	1,334 56	
Balance in petty cash	16 67	
		$1,794 85

Amount due from delinquent members—

Annual assessment for 1877		$5 00
" " 1880		70 00
" " 1881		155 00
" " 1882		455 00
		$685 00

WM. HENRY WHITE, Treasurer.

Examined and found correct.

A. B. SLATER,
G. S. HOOKEY,
Finance Committee.

On motion, the report as read was received, recorded, and placed on file.

Mr. Slater, of the Finance Committee, reported that his associates had examined the accounts of the Treasurer and found them to be correct; that they held bank books for the amount stated to be on deposit, and the check of the Treasurer for the balance.

NOMINATION OF OFFICERS.

On motion, the nomination of officers for the ensuing year was referred to the following Committee, appointed by the President:

William H. Price, L. P. Gerould, George G. Ramsdell, James R. Floyd, and Marcus Smith.

READING OF PAPERS.

The Association then listened to the reading of a paper upon "The Future of the Gas Interest," by Mr. J. C. Pratt, of Jamaica Plain, Mass., as follows:

THE FUTURE OF THE GAS INTEREST.

The paper which I am about to read, as you will very soon see, presents some views which are novel, and perhaps somewhat radical; and I can hardly expect that it will receive the cordial assent or approval of a very large number of members. However, without further remark, I simply beg you to honor me with your attention while I read to you my views on the future of the gas interest.

Railroad companies and gas companies, like other corporations, derive their existence from the people, but, unlike other corporations, they receive from the people rights and privileges which are of great value. To the railroad company is given the right of eminent domain, an almost priceless boon, and without which its charter would have no value—the right to take any man's house and land, no matter how dear it may be to him as the cherished home of his fathers or the comfortable home of his family, and pay for it a price which a jury may award.

For this great privilege the company owes a duty to the public which is too often forgotten or lost sight of—and that is to furnish it all the accommodations, in facilities and rates, consistent with a fair and reasonable interest on its real and legitimate capital; and beyond that it has no just or equitable right to go; there should be no surplus earnings except what may be necessary to provide for requisite improvements and repairs, and depreciation of property; all beyond that justly belongs to the public in the rates that may be demanded of it; and a great wrong is perpetrated when large and exorbitant profits are divided among the stockholders, whether in the shape of cash or watered stock. The public has the right to demand from these corporations this compensation for the substantial and valuable privileges it has conferred upon them.

The gas company has the right given it to invade every street and highway with its mains and supplies whenever it pleases. In a large majority of cases it is given a monopoly of the business; and for this the public has the right to demand compensation in a reasonable price for the commodity the company furnishes; it has the right to say to the company, "You are entitled to a fair and even liberal interest on your capital, but beyond that the profits belong to the people in the price they pay you."

This obligation has not been fully recognized by gas companies. Gas has become almost one of the necessaries of life, and it will become more and more so if we are wise in season, but less and less will it be a necessity if we do not open our eyes to what is before us.

As I have already said, gas companies are to a great extent exclusive monopolies. In many cities, in response to public clamor, rival companies have been organized, and the public has not been the gainer by it; for while, in some cases, sharp competition may have ensued and lower prices obtained, in a short time combinations of the new and old companies have been formed, rates agreed upon no lower than before the new company entered the field, and the public has enjoyed the combined monopoly of two or more companies instead of one, and had the satisfaction of paying, in its gas bills, the interest on double, or it may be four times, the previous capital.

I think it will be conceded by all who have knowledge on this subject that in a large majority of these cases, existing companies, had they been willing to reduce the price of gas to a point which would have insured to them reasonable dividends, and not striven to roll up large surpluses, could have maintained exclusive possession of the field which they occupied, given greater satisfaction to the public, and in the end realized larger profits; for it will not be disputed that one company can furnish gas in the same territory cheaper than two or more.

Until within the past few years the gas company has not only enjoyed a monopoly, but a comparatively quiet annd undisturbed monopoly of the business of furnishing illumination. We have always had the chronic grumbler, who disputes his bill and denounces the meter as a fraud and the managers as swindlers. This, as long as human nature remains as it is, we shall always have. But the public are waking up to this subject, and discussing it; the newspapers join in the hue and cry, and are ready to do all they can by favoring any and every practicable and impracticable scheme to break down this "huge monopoly."

It is hardly necessary to state all the reasons that are given for this opposition; the whole may be summed up in one sentence, and that is, "Gas companies are making more money out of the public than they have a right to make." In proof of this they call attention to the fact that we furnish no reports—that we do not let the public know what we are doing; and the assumption is that we are afraid to do so. I will neither admit nor deny the truth of this last statement; but I fear that if certain companies were compelled to reveal their corporate secrets—to show how much money they were making and how large a surplus they have accumulated—they would arouse a feeling in the communities where they exist in comparison with which the granger contest with western railroads would sink into insignificance.

Admit, if you please—which nobody will deny—that we have the right, under our charters, to keep from the public all information as to our business and profits; is it wise to do so? I claim that it is not. I claim that our business should be so conducted that we should be willing and glad to lay all its details before the public. There is no other manufacturing interest where the relations of the company are so close, and should be so intimate and confidential.

We are brought into daily, I may almost say hourly, contact with the people; we make their homes cheerful by the light we furnish for one-fourth at least of the twenty-four hours; they are visibly reminded of our existence, and how indispensable we are to their comfort and happiness. These relations create mutual obligations, and for these reasons, and those I have before given—viz., the rights and privileges they have conferred upon us—they have the right to know that the price they are paying us for gas is not exorbitant or unreasonable.

There can be no doubt that this ignorance of our affairs, which are a profound mystery to the public, together with the fact, which cannot be concealed, that many of our stocks sell at a very high premium, is the prime cause of the discontent and fault-finding that is so prevalent and almost universal.

The people think that the sale of a commodity which enters almost as largely into family use as water and food should not so enrich its manufacturers; and, whether right or wrong in their opinion, sooner or later they will find a way to ascertain the truth, and remove what they believe to be a great injustice.

The same power which has been successfully invoked, and sustained by the highest court of appeal in the land—the power of the people to fix and regulate rates of freight and passengers on railroads—may be and will be invoked to fix and regulate our prices. Already incipient steps have been taken in the British Parliament to have gas companies absolutely under municipal control in this respect. When such a movement commences in this country, I fear it will be too powerful to be resisted; and all the arguments that may be urged in relation to our vested and corporate rights will have no effect in opposition to the rallying cry of "the people, the dear people, the sovereign people," against the corporations that have few friends among the people.

Why should there be so much secrecy and apparent mystery in our business? A masonic lodge has hardly closer barred doors than a gas company. Their meetings are closed to the public; no reporters are admitted. Perhaps it is wise; but, so far as our proceedings are concerned, I should be glad to see them reported in the daily papers. The papers that are read here, and the discussions to which I have listened, would do credit to any deliberative body; and I think such a change would be a step in the right

direction, in bringing us nearer the people whom we serve. We meet here, and, conscious of our integrity and rectitude, think it unnecessary to repeat and deny charges that are made against us of dishonest and unfair dealing; and we let them pass unnoticed and unanswered. But that does not satisfy the public; they want the facts, and their claims are justly so, that every corporation that owes its existence to the people, and derives its entire support directly from the people, should render annually an account to the people, in a full and concise statement of the company's business. Many corporations are compelled by the law to do this. I would not invoke the law, but the higher consideration of right.

I believe that the sooner we place ourselves in close and intimate relations with our customers, have no secrets to be kept from them, are able and willing to show them our whole hands, the better it will be for our future prosperity.

There is no other branch of industry, except those that are protected by patents or tariffs, that is not open to the competition of the world. Cotton, wool, iron, and wood productions, and countless other products, can be manufactured anywhere and transported wherever they are wanted. Gas can only be used where it is manufactured; no foreign corporations can compete with us; we require no tariff for our protection. If coal advances in price beyond our ability to furnish gas at established rates without loss, as it did during the war, the public must consent to an advance. If the necessities of war demand a tax upon our products, we can add it to our gas bills; we can afford to pay our workmen liberal wages, and are not threatened with strikes; we are seldom obliged to pass our dividends; we are not troubled, as are other manufacturing interests, with an over-production of merchandise for which there is no demand. Seldom are gas managers found wearing long faces; their business is regular and constant; they know at the beginning of the fiscal year just about what their profits will be at the end of the year; seldom have they anything to estimate in the future, except what will be their probable increase of profits; they never look for a decrease, like the demand for water and food, the demand for gas is constantly increasing. Such has been and such is our condition to-day.

But, notwithstanding this uninterupted golden prosperity in the past, maintaining as we have a successful competition with the cheaper light furnished by kerosene, there is no use in shutting our eyes to the fact that we are to have a formidable competitor in the electric light. True it is that we can meet this new rival to-day, on account of its great cost, to say nothing of its unreliability and the dangers attending its use; but we must not forget that there are a thousand ingenious scientists at work to devise methods to cheapen its manufacture, as well as to remedy its dangers and defects. And this is not the chimerical problem of perpetual motion, but one that brains will study and work out.

In view of the wonderful progress that has been made during the past 30 years in the use of electricity, he is foolhardy indeed who asserts that the end of discovery and improvement has been reached. The transmission of the first message over the wires between Baltimore and Washington, a little more than thirty years ago, was an achievement so wonderful that it was heralded around the globe. Fitting and sublime were the words of that message—"What hath God wrought!"

The laying of the first cable across the Atlantic in 1858, laughed at and derided by wise men as impracticable and impossible, was accomplished; and after our Chief Magistrate and the Queen of England had exchanged congratulations over the great event, the cable parted; and there were sad faces, and croakers said, "I told you so;" but the men who were engaged in the enterprise did not lose courage. The broken ends were recovered from the ocean's bed and re-united; and to-day the laying of a cable across the oceans or seas excites a simple newspaper paragraph of a dozen lines.

Now almost the whole habitable globe is covered with a network of wires, revolutionizing trade, commerce, exchange, and all our methods of doing business; and the merchant, instead of waiting nine or ten months for an answer to his correspondent in Calcutta, converses with him almost as easily as with the customer in his counting room.

We read in the morning papers of July 11 that "Admiral Seymour opened fire from his fleet upon the forts at Alexandria at 9 o'clock this morning," which, calculating the difference in time, was actually put to press by the papers in this country in two hours after the bombardment commenced.

Webster, in that magnificent passage descriptive of the power of England, said, "A power which has dotted over the surface of the whole globe with her possessions and military posts, whose morning drumbeat, following the sun and keeping company with the hours, circles the earth with one continuous and unbroken strain of the martial airs of England." Not only does her "drumbeat follow the sun and keep company with the hours," but to-day the long roll that calls her battalions to the field on the plains of Egypt has hardly ceased before its vibrations are heard the world around, and every newspaper in the land heralds on its bulletins the details of the fight before the smoke of the battle has cleared away.

And all this has been accomplished within a quarter of a century—we may say within little more than a single decade from the laying of the first cable.

The following figures confirm the statement that the growth of telegraphic communication is in itself something marvelous: The Western Union Telegraph Co. alone own and operate 131,032 miles of line and 374,294 miles of wire, and has 12,050 offices. The number of messages sent by this company in 1867 was 5,879,282; in 1871, 10,646,077; in 1874, 16,329,256; in 1877, 21,158,941; in 1879, 25,070,106; in 1880, 29,216,509; in 1881, 32,500,000; and in 1882 the number will be 40,000,000, exclusive of private wire and railroad messages.

I will not particularize the astonishing improvements that have been made in the art of telegraphy, increasing its facilities and cheapening its use, except to say that a few years ago the cost of a message, of ten words, to Liverpool, was $100, and the same message can now be sent for $5. The cost of a message of ten words from New York to Chicago was $2.50; it is now 50 cents; and a similar scale of reduction has been made between all points. Science, improvement, and brains have accomplished this.

Is it safe, then, to conclude that we have reached the end of discovery and improvement that will apply this wonderful, mysterious, unseen, and incomprehensible power to illuminating purposes?

I know it is said that gas is to be applied to other uses than illumination, that it is to have a wider field, that it is to be utilized for heating our stores and dwellings, as well as for power. I admit all this; but how is it to be brought about? This is the question which we will be compelled to consider at no distant day.

I firmly believe that we "command the position;" we can pay fair dividends to our stockholders, and sell gas at a price that will defy all competition; we can compel, by its cheapness, its use for all domestic purposes where heat is wanted, and we can compel its use for power as a substitute for steam; we can so increase its consumption, at low, and at the same time paying rates, that we need have no fear of competition from the electric light or from any other source; and the sooner we demonstrate what we can do the better. It is not wise to permit, if we can prevent it, millions to be invested in the electric light with the improvements that are sure to be made, and then meet the competition; it will be a much harder fight then.

The future success of the gas interest will demand the acceptance and use of every real improvement, the strictest economy in every department of expenditure, the utilization of our residuals by a combination of interests, so that much larger profits may be derived from them; the acceptance by stockholders of a reasonable and at the same time ample return upon their capital; no watering of stocks; and a larger division of the surplus earnings to their customers in a reduced price of gas.

I know the difficulties that meet many of us in adopting so radical a change. The stocks of many companies are at 50 to 100 per cent. premium—a value based upon large dividends and great accumulations; and it will not be easy to satisfy stockholders that it is for their interest to inaugurate this policy; but, believing as I do that the time is coming when competition will force us to this conclusion, I am confident that the wise course will be to anticipate that state of things and prevent, by lower prices, the entering of powerful rivals into the field of illumination. The incandescent light, if it can be made as safe, as reliable, and be furnished as cheap as gas, will, if it does not drive gas from the field of illumination, receive a larger share of the business than we can well afford to lose. It does not meet either of these requirements to-day. Who will venture to assert that it will not be accomplished?

I need not add, in this connection, that much that I have said has no application to small companies in thinly settled localities, many of whom are struggling for an existence, and can do nothing for their stockholders.

I speak as a business man to business men. Many of you, perhaps all of you, are better qualified to discuss this subject than I am. My experience has been confined to the management, as president, of the small works at Jamaica Plain, one of the suburbs and outlying wards of Boston. I was almost the first man who built gas works in a small town, with a few of my neighbors, twenty-eight years ago. We conceived the idea that we wanted a better light than lard or whale oil gave us. It was before the great oil wells were discovered, and kerosene had not been introduced. We built them for our own comfort, not anticipating dividends, and were laughed at for our folly; but in two years they began to pay, and for twenty-five years we have divided, every six months, with a single interruption during the war, 4 per per cent. on our capital. At the start our price was necessarily high. We have gradually reduced it, and shall probably continue to do so. We have never watered our stock. We have just completed the rebuilding of our retort and purifying houses, putting in larger and improved machinery, paying for the same with the surplus which we have legitimately set apart for that purpose. We assure our customers that our policy in the future will be as in the past—to give them all we make over 8 per cent. in a reduced price of gas, reserving a suitable amount for depreciation, to be expended as we are

now expending it, in substantial improvements. We publish our annual reports, and the people read them and are satisfied.

If, then, gentlemen, you agree with me in this statement of my views, if you believe that possibly in the near future the electric light is to be our great competitor, then have the courage of your convictions, and tell your stockholders what you think there is in the future, what the dangers are, and how they may be averted, and leave the responsibility with them, tell them it is much easier to keep the field than to drive the enemy out when he has gained a foothold. Give them the facts, all the facts. They may be unpalatable, but are none the less facts; and however unpalatable or disagreeable they may be, will have to be met.

If, on the contrary, as is very likely to be the case, you think my views radical, visionary and unsound—if you think me a foolish alarmist, presenting bugbears to be laughed at and scouted, then all I have to say is:—Let this paper, if it is printed with your minutes, be read five years hence, and see who is the prophet.

On motion of Mr. Spencer, the thanks of the Association were tendered to Mr. Pratt for his able and interesting paper.

Discussion.

The President—The paper is now before the Association for consideration and discussion. Mr. Pratt, will you state what price you charge private consumers?

Mr. Pratt—We charge about three dollars; our former price was five dollars; we hope shortly to reduce to $2.50.

Mr. Coggshall—What is your capital?

Mr. Pratt—We have $200,000 of capital, actually paid in.

Mr. Spencer—I would like to ask Mr. Pratt the number of gas meters in use in his place, and the amount of gas, in million feet, sent out yearly; also the population of Jamaica Plain?

Mr. Pratt—I think we have about 700 meters; we manufactured 21 or 22 millions feet of gas last year. Our population is between six and seven thousand.

Mr. Helme—If the experience of gas men generally had been like that of Mr. Pratt we would have had some opposition to contend with. Eight per cent. upon his capital of $200,000 is $16,000 per year; and he puts out about 21 millions feet, and is now selling at $3. It does not seem to me that Mr. Pratt's management is first-rate, or his coal is very high, or else there are some other difficulties in the way.

Mr. Pratt—A very large proportion of our consumption is by the city; and we have to sell to the city for $2.25 per thousand feet.

Mr. Helme—Some of us consider that that is a pretty good price for gas. There is another thing which should be taken into consideration in connection with Mr. Pratt's theory. It is very evident that Mr. Pratt and his friends were wealthy gentlemen when they built these works, and simply wanted to invest their money; and eight per cent. at that time—twenty-five years ago—was not a very high rate of interest. Many of us went into business at about the same time as Mr. Pratt did, and directed our efforts to making some money for ourselves over and above six per cent., because we did not have a fortune to invest at six or eight per cent.; and if we had followed the policy which Mr. Pratt pursued we should not have made much money. It is a good thing now to put money in government bonds, or on good mortgages at four or six per cent., feeling that we can always get the capital back; but had we followed Mr. Pratt's policy, many of us would have been in such a condition that for every dollar invested we could not get back over twenty-five cents; and we might have been ruined by the operation. There are many gas companies in this country which do not pay six or even four per cent.; and there are some companies that do not pay anything at all, notwithstanding good management, because the circumstances are against them, and they are not able to make any money. I am myself unfortunate enough to own some stock in a company which does not pay anything as yet.

Mr. Harbison—Is it an opposition company?

Mr. Helme—No; I am not in any opposition company. When I do go into an opposition business I do not know any better place to go to than yours. Mr. Pratt has arraigned us, as it were, before ourselves; but I, for one, do not feel that we are quite as bad as his paper would lead the public to suppose that we are. Many of us have worked hard in the business; many of us suffered from a great deal of abuse, and have been looked upon by the communities in which we lived, in many instances, as men who are not capable of doing right even when we try. The gas business has been looked upon by investors, in the same light as insurance companies look upon certain risks, as extra hazardous. We know that many times misfortunes have overtaken gas companies and ruined them. I contend that gas companies are now doing the very thing which Mr. Pratt, in his paper, leads us to infer that they are not doing; and that is reducing the cost of gas. In very many cases the price of gas is already very low. General Hickenlooper sells at $1.60; Mr. Price sells at $1.65; and in Pittsburgh it is $1. Prices have been gradually coming down. Mr. Pratt does not seem to realize that some people have got ahead of him in the way of reduction, although he has got down as low as $3. Another thing which has always hung over the heads of gas companies is the liability to have people come into their town and, through the prejudice which exists against the company already in operation, succeed, by the use of potent arguments with the city council, in getting a charter for a new company, and thereupon commence to build opposition works. What is the result? Your profits are at once decreased, because of decreased consumption, and you are unable to give the same dividends to your stockholders, or to continue the same advantages to your consumers. I think, for these reasons, that gas companies are entitled to receive and to retain a higher rate of interest than is paid by companies which are perfectly safe. If, for any reason, the gas works become unprofitable, they cannot be carried away to another place, as can be done by a man who opens a store, and finding that competition is so great that he cannot make money, sells his store and takes his stock of goods to another place where there is a better chance. Gas companies cannot do that thing. I do not think that gas companies have, therefore, been doing so very badly with the public as has been charged; and I cannot endorse everything that Mr. Pratt says in his paper.

Mr. Spencer—I heartily agree with Mr. Pratt's paper in general. I believe he is sound in his theory. While it seems to me that the capital stock of Mr. Pratt's company is pretty large, and that the gas sent out at the price named ought to afford a larger return than eight per cent. on that capital; still I do not understand Mr. Pratt as claiming an eight per cent. dividend as a standard by which everybody ought to be governed. His idea, as I understand it, is to put himself in such a condition and attitude before the public that they may know about what money he is making; and he is willing to trust the public and to pay a reasonable return on the capital invested. I believe that to be the true policy. It is the policy that I have always advocated. As to the question of what gas companies are doing in reducing the price of gas, I would suggest that we are all doing more or less. The principal point of Mr. Pratt's paper, as I understand it, is that as we derive great advantages from the public the public have a right to know whether we are taking from them more than we have a right to take. I believe that the public have that right. I believe that if the public had an opportunity of knowing more about what we are doing the public would be willing to allow us a fair return of eight, ten, or even twelve per cent. upon the amount of actual cash invested. I believe we would all feel better about it after we had gotten used to giving the public this confidence; and I believe that a great many difficulties would be obviated thereby. We would thus shut out the gentlemen who are going around talking about starting opposition companies, and we would also forestall a great many of the electric light speculations. I believe that the true policy of gas companies is laid down in that paper, and hence I heartily endorse it.

Mr. Sherman—For the information of the Association I would like to ask Mr. Pratt what his coal costs him, and if there is any sale for his residuals—such as coke and ammoniacal liquor—and, if there is a sale, what price he obtains.

Mr. Pratt—I invite the closest, sharpest and severest criticism. I told you before I read the paper that I did not expect that you would all agree with me. My object will be accomplished if the subject is discussed. I am not thin skinned and will bear all the criticism that may be drawn out by reason of the views I have suggested. I do not expect that you will agree with me; but they are my views. I will say, in answer to the question of Mr. Sherman, that our coal costs us, in our sheds, $6 per ton of 2240 pounds. We sell our coke at about 7 cents per bushel, or $2.50 for 36 bushels. We get $1 per barrel for our tar. We have not been able to get anything for our ammoniacal liquor, or the sum is so small that it does not amount to very much. We are in a country place, have 25 or 30 miles of pipe, and of course there is considerable loss from condensation and waste, and that adds to the cost of the gas.

The President—What is the percentage of waste or condensation?

Mr. Pratt—I am almost ashamed to say that it has been 20 per cent. the last year. We have recently built new works. We have had the same old benches and retorts that we put in ten or fifteen years ago, and we have, of course, been working at a disadvantage. We have had no condenser of any magnitude, and we are so located that we can use but little water, because of lack of proper drainage. The city refuses to allow us to drain the ammoniacal liquor into the sewers. We have now put in a new condenser, purifiers, and exhauster, and expect to work to better advantage hereafter, and be able to sell the gas at a lower price. Our great aim now is not so much to increase our dividends as to reduce the price of our gas. We hope to accomplish that. We had laid up a surplus of about $30,000. We have laid aside one or two thousand dollars per year after keeping the works in order. That surplus we are spending in rebuilding our works. We have already substantially rebuilt everything except the gasholder; and we have still $10,000 in hand.

Mr. Sherman—I would like also to ask for information with regard to the

consumers. Have you any manufactories there? Are not your customers principally business men, who live there, but are engaged in business in Boston, and who burn gas with considerable liberality?

Mr. Pratt—We have no manufacturing interests at Jamaica Plain. It is a residence suburb of Boston. Our entire sale of gas is for the purpose of supplying the houses and the city with light. The population is between six and seven thousand.

Mr. Helme—Have you your leakage account?

The President—Mr. Pratt said that he regretted to acknowledge that last year it was twenty per cent.

Mr. Littlehales—While I thoroughly endorse every principle laid down by the gentleman who read the paper, I think, as Mr. Helme states, that the fact that so many go into the gas business, with the sole object of making money, is the cause of the difficulty which Mr. Pratt is trying to remedy. If gas companies were started and conducted, as I think they should be, mainly as an investment, and for the public advantages which they confer, they would do well; but if they go beyond that, for the mere purpose of making money, they make a mistake. That is the very thing which will create the trouble which the gentleman is trying to obviate. The best evidence of the necessity of the caution which Mr. Pratt has given is the fact that the capital of many companies is five times what it ought to be. That is one reason why we have so often to meet the public and apologize for the high price of gas. Unfortunately we have but little control over the issue of stock. Many of the gentlemen present thoroughly endorse the principle of limiting the capital stock, but know that it is a matter which is largely outside their control. It may be an unpalatable fact, but nevertheless I believe that it is mainly the fault of the existing companies whenever an opposition company goes into operation. If a gas company does not do all in its power to meet the demand made upon it; if it does not recognize the principle that the public have rights; if it does not take the public into confidence and let them know what is being done, then the way is opened for opposition. It is the unknown which is most feared—it is the unknown which excites suspicion. If the public know just what you are doing; if they think you are acting fairly and squarely, I think they are not so unreasonable as to object to your deriving a fair profit from them. If a company can pay a 10 per cent. dividend, and after paying that 10 per cent. can put aside a reasonable sum as a reserve, the public get an adequate advantage and will be satisfied. We have been reducing the price of gas, from time to time, from $3 to $2.50, and at the present time to $1.87, with the prospect of reducing to $1.75. We are charging only $1.50 to users of stoves and engines. Our consumption is about forty millions feet; and I do not think you can find many places where there is less dissatisfaction, because the public know that the directors have carried out their announced policy of paying a ten per cent. dividend. The policy adopted in England with reference to the payment of dividends by gas companies has proved advantageous both to the public and to the companies. As many of you are aware, any three consumers who have reason to believe that a company has charged a higher price, or is making more money than the act of incorporation entitles it to, can have the books examined by a professional accountant; if it can be shown that there was a margin of profit, after paying the statutory dividend, of only one penny per thousand feet, the company has to reduce the price of gas to that extent. The public thus know that there is nothing to conceal. All the accounts are open for inspection, and everything is cut down to the lowest possible figure. The public being thus protected, no other stocks are considered more safe and profitable as an investment than the gas stocks. If that plan were adopted in this country the gas companies would not suffer at all, and the interests of the public would be greatly improved.

The President—I understand that Mr. Thomas Curley, of Wilmington, Delaware, has had some experience in the advantages to be derived from reducing the price. Will he be kind enough to give us the benefit of his experience?

Mr. Curley—At the present time we charge the general consumers $1.50, for heating and cooking stoves $1.25, and we get a little less than 90 cents for the public lamps. We have increased the consumption by the reduction in price; our consumers have been very well satisfied; the city councilmen are also satisfied, and there is a good feeling all around. The company is satisfied, and is able to pay its usual dividend of 12 per cent.

Mr. Pratt—What do you get for your residual products?

Mr. Curley—We get from three to five cents per bushel for coke; for tar, from $1.40 to $2. We get nothing for the ammoniacal liquor.

Mr. Pratt—What is your capital stock?

Mr. Curley—$280,000.

Mr Pratt—How much gas do you manufacture and sell during the year?

Mr. Curley—Last year a little over sixty millions feet.

Mr. Pratt—How many miles of mains have you?

Mr. Curley—Less than forty miles; and about 3,000 consumers.

The President—Is the increased consumption due to a larger number of consumers, or to an increased liberality in the use of gas upon the part of the same consumers?

Mr. Curley—There is a great deal of it due to the reduction in the price of gas. We find a number of consumers among the people who never burned gas before. They are quitting the use of oil, and beginning to burn gas.

The President—Does your increase come mainly from that source?

Mr. Curley—Partly; but not altogether. Our manufacturers have increased their consumption to a considerable extent.

Mr. Pierson—When did you reduce the price; and how does the increase this year compare with the increase last year?

Mr. Curley—There is an increase of 30 to 40 per cent. of increase this year over the previous year.

Mr. Pearson—How does the increase this year over last year compare with the increase of last year over the year before?

Mr. Curley—I say that it has increased about 30 per cent. That is, our increase last year has been greater by thirty per cent. than it was the previous year.

The President—What was your proportionate increase last year over the year previous?

Mr. Curley—The first year about 16 per cent.; this year something over 30 per cent.

The President—What was your price before you reduced?

Mr. Curley—Four dollars.

Mr. Sherman—Can your works be duplicated for your present capital? Or is your ability to pay dividends at this remarkably low price accounted for, as it is in some instances, by having built your works out of the profits of previous years? In other words, have you not been putting your profits into the works, and now giving the consumers the benefit of these profits?

Mr. Curley—The works could not be duplicated with our present capital.

Mr. Sherman—Then in former years you have put your profits into your works?

Mr. Curley—Yes.

Mr. Sherman—That should be understood as being one element of cheap gas. I know of one company in Massachusetts who have been charging their consumers for only about half of the capital invested in their works, and in that way are able to furnish their consumers with cheap gas.

The President—That is a very important item dependent upon the amount of capital it is necessary or advisable to invest. That ought properly to form the basis for the consideration of the price to be charged the public, and the profit to be allowed to the producer.

Mr. Pratt—It is a most extraordinary statement that, with $280,000 capital, 40 miles of pipe, and sixty millions feet of gas, that company can furnish gas at the price it does, and pay the dividend of 12 per cent. Put these figures together and you will see how readily a larger dividend would be paid on a smaller capital. There is no doubt that many works have been built on speculation, by contractors, who have been obliged to take stock in payment and the works thus stand at a very high cost. Two weeks ago I was invited by some gentlemen to go up to a place in our state and to look at some gas works. They were capitalized at $50,000; and they talked of buying them. I investigated the matter, and told them that if they could get the stock at thirty cents on the dollar it would do to buy the works, because the works could be duplicated for $20,000 or $30,000.

Mr. Helme—I know that Mr. Curley's increase has been very great, and it is due to the fact that the works are well managed, the capital small, and everything is in their favor; but judging from my own experience there can be no doubt that increased consumption very rapidly follows a reduction in price. The only question with us is how much of a reduction can be made? Do not make the reduction too rapidly, because the people may not appreciate the reduction rapidly enough to enable you to continue to pay the dividends that you have been paying. There is another thing which must be looked at, and this is that there is no company located in a thriving, growing town which is not constantly obliged to extend its mains; and in many cases those extensions are very costly, and the returns are small. It is often the case that members of the city council, or their friends, live in the suburbs, and it is desirable to gratify them and to comply with their wishes by extending the mains in their direction. If you ask the stockholders to contribute to the capital for this purpose, you will find that many of them cannot contribute readily. They want their dividends regularly; and many are dependent upon the dividends for their living. If you apply to them for four, five or ten per cent., to be invested in new mains, or say to them that you will not pay any dividends next year, because you will have to use the profits to make the extensions, you will find that they will demur to the extensions. I think that a gas company is entirely justifiable in paying a ten per cent. dividend. I, for one, am entirely satisfied with ten per cent. I have always recommended reducing the price of gas when more than ten per cent. could be paid. But if you divide the ten per cent., and, finding that you have a thousand over, put down the price of gas, you do not get rid of people applying to you to extend your mains, and have nothing in the treas-

ury to do it with—what is the result? You must then go in debt, or you must leave these grumblers on the outside; and it is not desirable to do either. I think that we do not do our consumers any injustice if we spend a portion of that money in dividends, and then keep a portion of it for that very purpose. I am perfectly satisfied with a ten per cent. dividend, and ten per cent. reserve; and I think that a ten per cent. reserve will meet all the demands for extensions.

Mr. Slater—I think the point made by Mr. Sherman is a very good one. It would almost seem as if the citizens of Wilmington owned their gas works without having any certificates of stock, but getting their dividends in the low price of gas. Any company which has done a large amount of business, increased its capital for extensions, and paid out what it could in dividends to stockholders, has had a very large capital as compared with Wilmington. Very many of the companies, all over the country, stand to-day with very large capitals in comparison with the amount of gas sent out. Some companies, like the one at Wilmington, and others which I might mention, have invested their profits in the works, and can therefore afford now to sell gas at a very low price.

Mr. Copp—Unfortunately I once invested in a gas light company at Rockland, Maine. I bought the stock at a very low price, but have never been able to get any dividends. The price of gas originally was $5; it was reduced to $4, with no perceptible increase in the consumption. We were selling a million and a-half of gas at $4. That gave us $6,000 in the treasury; it cost us about $5,500 to manufacture the gas. We thought an effort should be made, by reducing the price of the gas, to increase the consumption. So we went around among the storekeepers and dwelling-houses (there are no manufactories there) to get them to agree, if we would reduce the price to $3, to contribute to the increase in consumption. A considerable number of storekeepers agreed to do so if we would reduce the price to $3. We did so; and the first year we sold 2,200,000 feet, and this year we shall sell more than three millions. If we sell three millions at $3 we shall receive $9,000, without having expended over $6,000. That has been the result of a reduction in Rockland.

The President—The experience in Cincinnati, following the reduction in price, points rather to an increased liberality in consumption on the part of old consumers, rather than to an increased number of consumers; but whether that is due to the reduction in price, or to the increased business prosperity of the country, is an unsolved problem in my mind.

Mr. Helme—I think likely the increase comes from both sources. I have noticed that when gas is high the restaurant and storekeepers will not burn much; but when a reduction in price is made they will increase their consumption by one or two burners. There is no increase of expense to the company except the cost of the gas. I think there is an increase of about 60 per cent. in the amount of consumption; and that about 40 per cent. of the increase is due to the new burners.

Mr. Harbison—Mr. Nettleton has been a pioneer in low prices, and we should all like to hear what has been his experience.

Mr. Nettleton—Some years ago I commenced to reduce the price of gas, and I noticed that my consumption increased, and also that the number of consumers increased as the price went down. I followed that thing up until I am now satisfied that it is the true policy of the company that I am connected with. How far they can go in the way of reduction I do not know; but I am satisfied that we have not reached the lowest limit. Last year our average was $2.08; this year it will be somewhere about $2. The average per meter last year was about 43,000 feet; this year it is between 45,000 and 48,000. Of course a part of the increase depends upon the business prosperity of the community in which I am located. A part of it also depends upon the feeling that they can get more for their money, and that the gas company is disposed to treat the consumers fairly. The good will of the people in any undertaking is worth a great deal. I think we have the good will of a majority of the consumers of our company, and, as a result of that, they do not stint the burners.

The President—In connection with that subject I will ask if there is any gentleman present representing gas companies that have not reduced the price of gas within the last year, who have found that their consumption has increased to a corresponding extent or equal to that of the companies which have made reductions?

Mr. McElroy—I represent a company which has not reduced its price within the last year; but our consumption is greatly increased. The increase is partly due to the new consumers; but I attribute a large proportion of it to the education of the public eye to demand more light, and to the influence of the electric light. I cannot say that we have made any great extension in our lines of pipe, but I do say that our consumption is greatly increased. I think it has increased over twenty millions. Our present price is one dollar. [Laughter.]

The President—It ought to be explained that that price has prevailed for a number of years, but that outside of the immediate area of the two existing companies the prices are higher.

Mr. Pratt—What is your highest price?

Mr. McElroy—We are limited by our charter to $1.60.

Mr. Pratt—What does coal cost?

Mr. McElroy—The coal costs about $1.60 per short ton, in the house. Of course there is something due to this low price. I would like to have Mr. Pratt perpetuate his views here in Pittsburgh as to the liberality of gas companies.

Mr. Pratt—I do not see that there is much margin for a reduction of price in Pittsburgh. I think that $1 per thousand is low enough.

Mr. McElroy—We sell gas to the city at 75 cents.

Mr. Pratt—Then I do not think there is much chance for a reduction in Pittsburgh.

Mr. McElroy—I do not see that there is; but still we are willing to treat the public liberally if they will let us alone.

The Association here took a recess until two o'clock, P.M.

[To be continued.]

Report of the Superintendent of Public Lamps on the Number and Cost of the Public Electric Lights in the City of Boston, Massachusetts.

The following report on the number and cost of the public electric lights in operation in the city of Boston, Mass., up to date of October 9, 1882, was made by the superintendent of lamps, Mr. George H. Allen, in response to a request for the same from the Board of Aldermen of that city—

LAMP DEPARTMENT OFFICE,
BOSTON, Oct. 9, 1882.

To the Board of Aldermen: Gentlemen—In compliance with the order of your Board, passed October 2d, requesting a report to be made of the number of public electric lights now established in this city, with a statement showing the cost of the same, as compared with the cost of the gas lamps displaced by them, and other facts relating to the expenditures of the department, the following is submitted—

Under the direction of the Board of Aldermen, contracts for the establishing of not exceeding one hundred electric lamps each, with the Brush Electric Lighting Company, and with the New England Weston Electric Lighting Company, have been made.

There have been located, and are now in use under these contracts, 103 lights, costing at the rate of $23,108.15 per annum, as follows:

Of the Brush electric lights, 51, costing, by the terms of their contract, 65 cents per lamp per night, or $237.25 each per annum	$12,099 75
Of the New England Weston lights, 52, costing, by the terms of their contract, 58 cents per lamp per night, or $211.70 each per annum	$11,008 40

The number of public gas lights which have been displaced by the 103 electric lights is 325, and the cost of maintenance of the gas lights displaced would amount to $9,799.77 per annum.

The cost of maintenance of the 103 electric lights is $13,308.38 in excess of the former cost of gas, lighting, and care of the 325 lamps displaced.

It is fair to state that there are a few instances where additional gas lights could be dispensed with but for their location adjacent to the side streets and dangerous passage-ways, and it is also true that, in an equal number of instances, demands have been made to have gas lamps restored where they have been removed; but such requests have not, as yet, except in one instance, been complied with.

GEO. H. ALLEN,
Superintendent of Lamps.

Metallic Gas.

London *Iron* contains the following particulars regarding the invention of Mr. John Dixon, of Liverpool:

We have recently received particulars of an invention which constitutes a new departure in the manufacture of illuminating gas, and which is being carried out on a small scale in Liverpool. The new illuminant is described as metallic gas, and is the invention of Mr. John Dixon, of the above town, where a company has been formed for working the patent. Mr. Dixon claims for his invention the production of improved gas for illuminating purposes by the decomposition or dissolution of the component parts or constituents of metals, earths, acids, carbon and hydrocarbon substances, and the salts of alkalies, the dissolution of the substance being caused by heat.

It has long been known that certain chemical substances, when strongly heated, produce a white light, and, acting on this knowledge, the inventor has produced an apparatus capable of manufacturing and storing a gas the result of the decomposition of the chemicals above referred to, so that now he is prepared to supply a gas which, he says, is not only superior to, but much cheaper than any other.

The model works in the Commercial Road, Liverpool, are capable of sup-

plying one thousand ordinary burners. The estimate of the inventor is that whereas 1000 men will produce a given quantity of coal gas, three men under his system will obtain a like quantity of metallic gas, which will give a light of six times the luminosity. In every way has the metallic gas been tested, and in some instances it has been stored for upwards of twelve months, and its efficiency was found to be unimpaired. It has been found to travel any distance through the ordinary mains and pipes, and without condensation. In the manufacture of metallic gas retorts are employed similar to those of the ordinary gas works. The retorts and their contents are heated to a cherry red heat. After generation in the retorts the gas is led through a pipe, and the condensed vehicle is deposited in a recoverer. The function of the recoverer is to extract as far as is possible the kerosene used in the retort supplier. The gas is subsequently sent to the purifier. Entering the purifier at the bottom and issuing from the top, the gas is led to and stored in a gasholder from whence it is sent through mains for use.

The gas is of a dry nature, and nearly incondensable, and is not affected by extreme cold. Mr. Dixon is able to recover the vehicle, such as kerosene, used in the generation of his illuminating gas, and, afterwards distilling it, he re-employs it for purposes of generation.

It is stated that the residue, when practically discarded for gas purposes, can be turned into good account, and aniline colors, benzol, ammonia, carbon, and other valuable products obtained. With regard to the illuminating power of the metallic gas, it is stated that that has been tested many times by having two jets compared, one being the gas supplied by the Liverpool gas company, and the other supplied with the metallic gas. The gas company's burner is a No. 2, whilst Mr. Dixon's is a No. 0, and yet, when tested Wright's photometer, the luminosity of the latter over the former is as one, affording a clear, brilliant white light, and not at all fatiguing to ne eyes.

When the burners are reversed, the light given by the No. 2 burner puts in the shade the gas company's light. An important feature in the metallic gas is its purity and the entire absence of any obnoxious sulphurous smell, vapor, or smoke. Tested with sheets of white paper, and held over the flame of each gas for a short time, it is said that the metallic gas was shown to be freer from contamination than the coal gas. The smell of the new gas is not so unpleasant as the old, but its presence in case of a leak can be easily detected.

On the whole, so favorable a case appears to be made out for the new gas that we shall no doubt soon hear of its adoption in practice beyond the present small works.

[This is what the London *Journal* has to say about Mr. Dixon's invention, and whatever excuse may be made for the *Liverpool Daily Post*, we cannot quite see what available excuse can be offered for the action of a reputable technical journal like *Iron* in placing such an effusion before its readers without a word of dissent or condemnation.]

DIXON'S GAS IN LIVERPOOL.

While gas companies have been engaged in watching the development of electric lighting, other rival methods of general lighting have, unobserved, been creeping to the fore. It may be remembered that some months since we noticed the proceedings of a Mr. Dixon, an Australian gentleman who claimed to have discovered a new "metallic gas" which was to be sold at wonderfully cheap rates; thereby, of course, abolishing coal gas altogether. This new gas was to be produced by a burlesque combination of various metals and earths, mixed with paraffine or petroleum; and the ridiculous character of Mr. Dixon's pretensions was well exposed by a scientific gentleman of Sydney as soon as the patent specification was published. It might have been thought that a project so thoroughly demolished in the place where it originated would have instantly collapsed. Such was indeed the case at Sydney; but we regret to find that the base of operations has only been changed from Australia to Liverpool. By some occult means Mr. Dixon has obtained the support of the *Liverpool Daily Post*, and a recent issue of this newspaper contains a long and most misleading statement concerning the "new metallic gas." No sensible person is likely to be affected by this garbled account of a petroleum gas process, the scientific value of which may be inferred from the remark that "Mr. Dixon is actually able to recover the vehicle, such as kerosene, used in the generation of his illuminating gas, and afterwards distilling it, he re-uses it to generate more of the gas for consumption." The worst feature about this revival under the auspices of the Liverpool newspaper, however, is the fact that the account in question is deliberately prepared for the purpose of being copied into other newspapers, so as thereby to cause some perturbation in ignorant minds. It is possible that the *Liverpool Daily Post* may have been deceived in this matter; but it is at least incumbent upon a respectable journal to observe some care in affairs of this kind.

JEFFERSONVILLE, IND., is to build a water works, the cost of which will be about $80,000.

Gas as the Most Economical Form of Fuel.

The discussion session in connection with the Manchester Association of Employers, Foremen and Draughtsmen was opened on Saturday, October 14th—Mr. J. Craven occupying the chair—on which occasion a paper on the "Economical Consumption of Fuel" was read by Mr. J. Nasmyth.

In the course of his paper Mr. Nasmyth urged that for the process of combustion fuel in gaseous form could be employed under more favorable conditions than any other. According to Faraday, ordinary coal, when in a furnace it had been turned into carbonic acid and nitrogen, evolved about 1200° of effectual heat; but if the fuel could be so burned as to cause the produced gases to pass over incandescent carbon, a gas was produced which, when afterwards consumed, generated an effective heat of 4000°. The question of the practicability of using gas as fuel had been really solved by the Siemens regenerative gas producer; but there were in the field two other gas producers of the same class—viz., the Dowson and the Wilson apparatus, the former having been mainly applied to the purposes of gas engines, while the Wilson apparatus had been adapted to many purposes, including steam boilers. It was found that by converting coal into gas before using it as a fuel two distinct advantages were gained over the old method of using the fuel at once. They partially saved the loss of heat caused by the carrying action of the nitrogen, and they produced a greater number of combustible gases, using up a much larger proportion of the heat-giving substances in the fuel. But there was a third advantage which was gained by the subsequent application of the producer gases; and this was that by mixing the gases with air between the producer and the furnace, a perfectly effective combustion was achieved, and this was more especially the case when the mixture of air and gas was heated prior to ignition. The cost of these producers had undoubtedly stood in their way, but there was no doubt that, given the public recognition of their value, the cost would, by subsequent inventions, be rapidly reduced.

Apart, however, from the actual combustion of fuel, and especially of gaseous fuel, there were undoubtedly many ways in which gas might be useful; and in no direction was this being shown more palpably than in the increased employment of gas engines. These useful machines were not only being more widely applied, but were being made of larger dimensions so as to generate much more power than was at one time thought possible. While he was of opinion that for very heavy work, where large powers were wanted, gas engines would not take the place of steam engines, still it seemed now to be established as a fact that in many places and for many purposes they were a great deal better than steam engines. It was, however, quite possible that given the general acceptance of gaseous fuel, the cost of steam-raising might be considerably reduced, and the inconvenience resulting when it was necessary to get up steam quickly would be almost entirely done away with, for it was one of the special advantages of gas that the supply could be increased or diminished at will; and when it was borne in mind what trouble was entailed when a fire had to be fed and caused to burn quickly, this was no mean advantage.

Supposing, however, the general use of fuel continued, was it not worth while considering whether some steps might not be taken to utilize the bye-products which were created, and thus render the use of such fuel more economical? The experiment had already been tried and had resulted in a certain measure of success sufficient to warrant its further application. It seemed, however, to him that the question of the application of gas was resolving itself into a matter of time, and that eventually one use of fuel in the present wasteful way would be entirely done away with.

After the paper had been somewhat freely discussed, a vote of thanks was passed to Mr. Nasmyth; and in acknowledging the same he observed that in his opinion gas engines were at present only in their infancy, and had a great future before them.—*Journal of Gas Lighting.*

Correspondence

[The JOURNAL is not responsible for the opinions expressed by correspondents.]

Ventilating Chandeliers.

NEW YORK, October 18, 1882.

To the Editor AMERICAN GAS LIGHT JOURNAL:

After reading the paper, submitted by Mr. George Bray, to the North British Association of Gas Managers, as published in your issue of October 16th, I desire to state that, in the year 1858, when in London as the guest of Mr. George Lowe (at that time, I think, the veteran engineer of the London Chartered Company), I saw at his residence, in practical use, several of the ventilating chandeliers arranged for Argand and fishtail burners—not in any essential point differing from the illustrations published with Mr. Bray's letter.

Yours, etc.,

THEODORE W. PARMELE.

THE AMERICAN GAS LIGHT JOURNAL

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THURSDAY, NOVEMBER 2, 1882.

Gas Stocks.

Quotations by G. W. Close Jr., Broker and Dealer in Gas Stocks.
(with W. B. Scott & Co.,)
34 PINE STREET, NEW YORK CITY.

NOVEMBER 2, 1882.

☞ All communciations will receive particular attention
☞ The following quotations are based on the par value of $100 per share.

	Capital.	Par.	Bid.	Asked
Gas Co.'s of N. Y. City.				
Central	$466,000	50	75	85
Harlem	1,800,000	50	96	99
" Bonds	170,000			103
Manhattan	4,000,000	50	216	220
Metropolitan	2,500,000	100	176	180
" Bonds	658,000		105	108
Mutual	5,000,000	100	102	104
" Bonds				
Municipal	1,500,000	100	187	190
" Bonds	750,000		106	110
New York	4,000,000	100	112	115x
Northern	270,000	50	—	100
Gas Co's of Brooklyn.				
Brooklyn	2,000,000	25	105	110
Citizens	1,200,000	20	65	70
" S. F. Bonds.	320,000	1000	105	107
Fulton Municipal	3,600,000	100	—	75
Peoples	1,000,000	10	40	45
" Bonds	290,000		104	107
" "	250,000		78	90
Metropolitan	1,000,000	100	65	70
Nassau	1,000,000	25	55	60
" Ctfs.	700,000	1000	93	96
Williamsburgh	1,000,000	50	50	55
" Bonds	1,000,000		100	101
Richmond Co., S. I.	300,000	50	70	75
" Bonds	40,000	—	—	—
Out of Town Gas Companies.				
Buffalo Mutual, N.Y	750,000	100	—	75
" Bonds	200,000	1000	95	100
Citizens, Newark	918,000	50	—	—
" " Bds.	124,000	—	105	10
Chicago Gas Co., Ills			125	—
Cincinnati G. & C. Co.			178	180
Consolidated, Balt.			42	43
Bonds			107	—
East Boston, Mass	220,000	25	122	128
Hannibal, Mo	100,000	100	95	100
Hartford, Conn	700,000	25	120	128
Halifax N. S	400,000	40	148	150
Hamilton, Ontario	150,000	40	117½	
Jersey City	750,000	20	155	160
Jacksonville, Ill	120,000	50	100	
Lewistown Maine	400,000	100	—	100
Laclede St Louis Mo	1,200,000	100	117	—
Montreal, Canada	2,000,000	100	186	187
New Haven, Conn		25	144	—
Oakland, Cal			32	33
Peoples, Jersey City			75	80
" " Bds.				
Pittsfield, Mass			120	130
Rochester, N. Y.		50	70	80
Wilmington, Del		50	174	
Yonkers		50	30	32
St. Louis Missouri	600,000	50	250	254
San Francisco Gas Co., S. Fr'isco Cal.			68	69
Toledo, Ohio			95	97
Troy, Citizens	600,000	100	—	—
Washington, D. C.	1,500,000	20	215	220
" Scrip	375,000	15	245	250

The New York Gas Light Company has declared a dividend of five per cent., payable November 1st. The Municipal Gas Light Company has declared a dividend of 7 per cent., payable November 1st.

The following gas stocks were sold at auction, October 25th—

100 shares New York, at 113–113½; 234 shares Harlem, at 98¾–99; 60 shares of Citizens Gas Light Company, of Brooklyn, N. Y., at 67½; two shares of Metropolitan Gas Light Company, of Brooklyn, N. Y., at 66¼.

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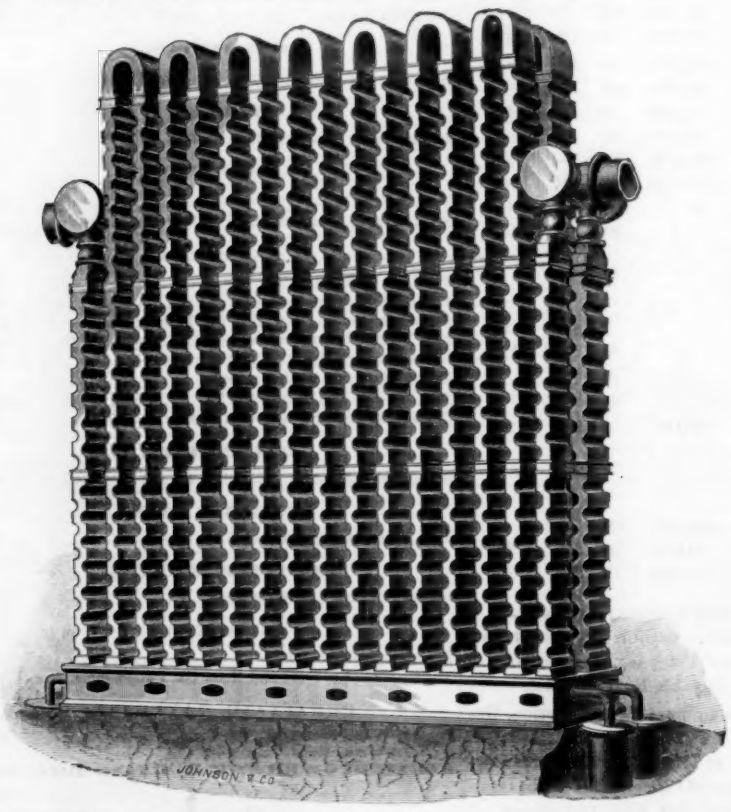

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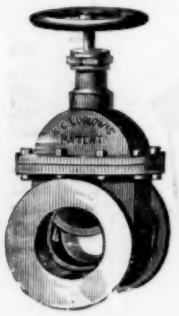

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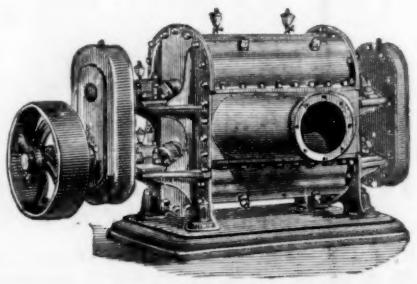

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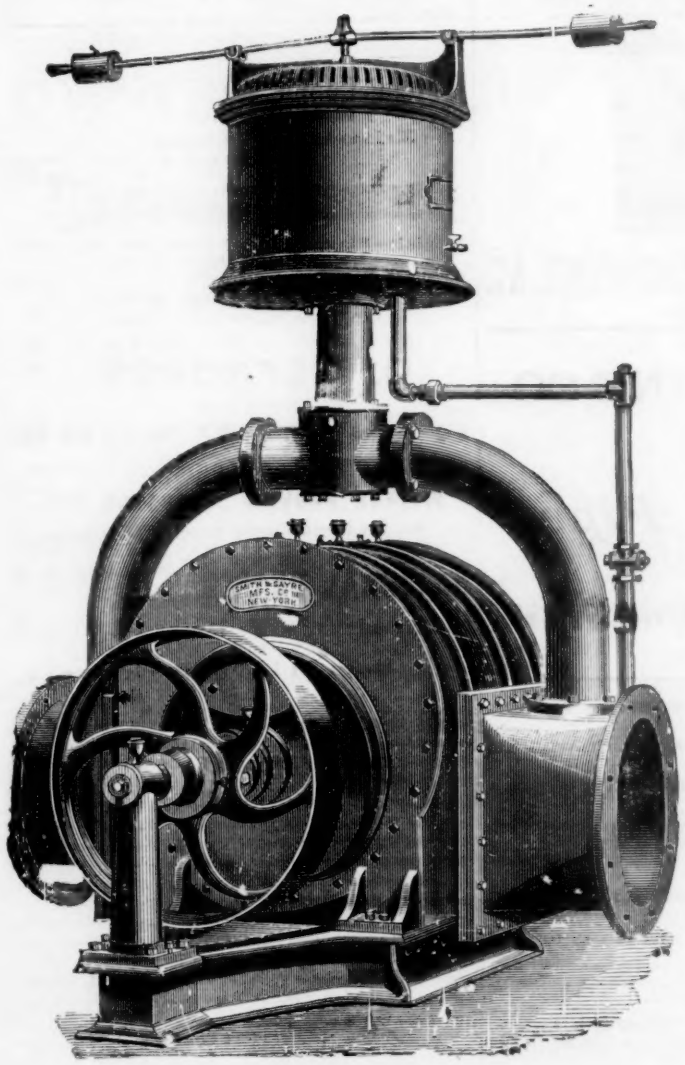

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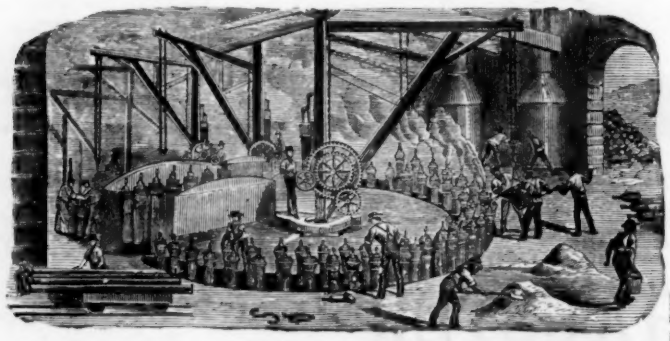

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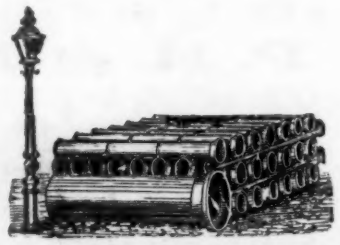

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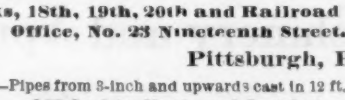

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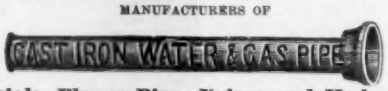

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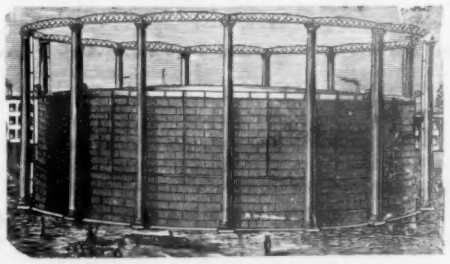

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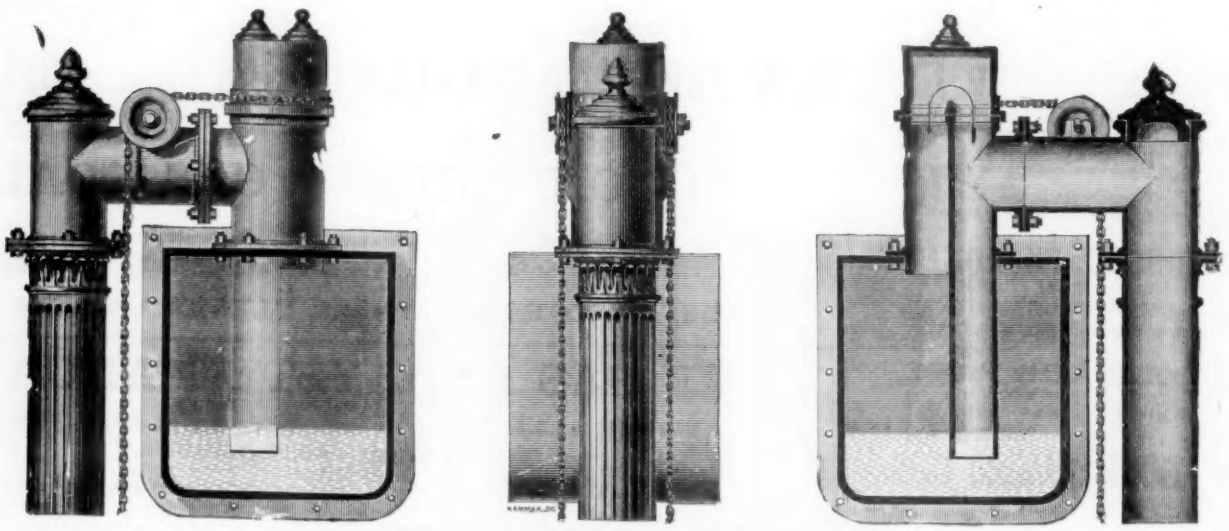

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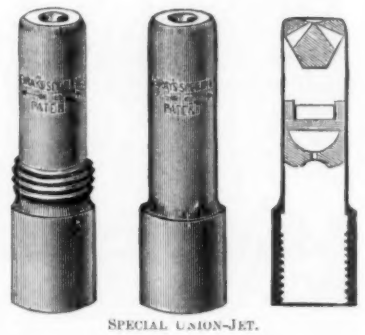

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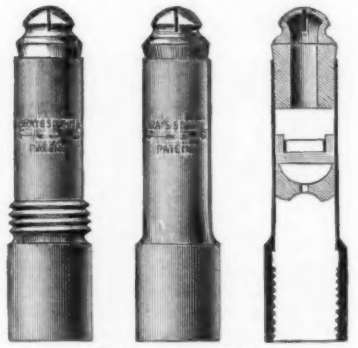

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